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EXAMINER

CHERRY, STEPHEN J

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| ART UNIT | PAPER NUMBER |
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2863

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/693,025

Applicant(s)

RANDALL, BRUCE E.

Examiner

Stephen J. Cherry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-26 and 37-40 is/are pending in the application.
- 4a) Of the above claim(s) 37-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-19 and 25 is/are rejected.
- 7) ☐ Claim(s) 20-24 is/are objected to.
- 8) ☐ Claim(s) 37-40 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Claims 1-15, and 27-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Newly submitted claims 37-40 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Application contains claims 16-26 and 37-40 drawn to the following groups:

- II. Claims 16-26, drawn to apparatus for use in an electricity meter using a sampled current value or a sampled voltage value, classified in class 702, subclass 60.
- IV. Claims 37-40, drawn to arrangement for use in electricity meter with internal sensor circuit and analog to digital conversion circuit, classified in class 702, subclass 198.

Inventions IV and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the sampled voltage or sampled current value is not claimed; thus, the scope of the claim would include power signals or

power factor signals. The subcombination has separate utility such as use in an electricity meter with an external sensor.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 37-40 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Specification

The disclosure is objected to because of the following informalities: Page 2 of the specification, as amended in the reply of 3-26-2004, recites an equation for energy use which appears to be missing a sample time differential value.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16-19, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,619,142 to Schweer et al.

Claim 16 recites, as disclosed by Schweer, et al:

16. An apparatus for use in an electricity meter, the electricity meter operably coupled through an external transformer ('142, 10) to measure electricity consumption on a power line ('142, col. 3, line 34); the apparatus operable to compensate for measurement errors of an external transformer ('142, col. 1, line 53), the apparatus comprising:

- a) a memory storing data representative of at least one error rating for the external transformer ('142, col. 8, line 50 to col. 10, line 15, "slope" and "offset");
- b) a processing circuit ('142, 72, col. 6, line 2) operable to obtain at least one electricity consumption measurement value, the at least one electricity consumption measurement value comprising either a sampled current value or a sampled voltage value ('142, col. 7, line 40), and adjust the at least one electricity consumption measurement value using at least a portion of the stored data ('142, col. 8, line 50 to col. 10, line 15).

Claim 17 recites, as disclosed by Schweer, et al:

17. The apparatus of claim 16 wherein the processing circuit is further operable to: obtain at least one error rating comprising a ratio error rating for the external transformer ('142, col. 8, line 50 to col. 10, line 15, "slope"); obtain at least one electricity consumption measurement value comprising a sampled current value ('142, col. 7, line 42); and adjust the

sampled current value using the stored data representative of the ratio error rating ('142, col. 9, lines 15-55).

Claim 18 recites, as disclosed by Schweer, et al:

18. The apparatus of claim 16 wherein the processing circuit is further operable to: obtain at least one error rating comprising a phase error rating for the external transformer; and adjust at least one electricity consumption measurement value using the stored data representative of the phase error ('142, col. 57 to col. 10, line 15, including "slope" factor).

Claim 19 recites, as disclosed by Schweer, et al:

19. The apparatus of claim 16 wherein the processing circuit is further operable to adjust the at least one electricity consumption measurement value by multiplying either the at least one electricity consumption measurement value or a phase shifted electricity compensation measurement value by a dynamic compensation factor ('142, col. 7, line 8 and col. 9, lines 15-55).

Claim 25 recites, as disclosed by Schweer, et al:

25. The apparatus of claim 16 wherein the processing circuit includes a digital signal processor ('142, 72).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,619,142 to Schweer et al in view of Horowitz and Hill.

The claim recites, as disclosed by Schweer:

An apparatus for use in an electricity meter, the electricity operably coupled through an external transformer ('142, 10) to measure electricity consumption on a power line ('142, col. 3, line 34); the apparatus operable to compensate for measurement errors of an external transformer ('142, col. 1, line 53), the apparatus comprising:

- a) a memory storing data representative of at least one error rating for the external transformer ('142, col. 8, line 50 to col. 10, line 15, "slope" and "offset");
- b) a processing circuit ('142, 72, col. 6, line 2) operable to obtain at least one electricity consumption measurement value, the at least one electricity consumption measurement value comprising either a sampled current value or a sampled voltage value ('142, col. 7, line 40), and adjust the at least one electricity consumption measurement value using at least a portion of the stored data ('142, col. 8, line 50 to col. 10, line 15).

However, Schweer does not disclose the use of EEPROMS for use as the memory unit ('142, 73).

The claim further discloses an EEPROM, as disclosed by Horowitz and Hill:

"wherein the memory includes an EEPROM." (Horowitz and Hill, "The Art of Electronics", p. 502)

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an EEPROM in the memory unit of Schweer to allow the data to be retained while power is off and also allow the information to be changed (see Horowitz and Hill, p. 502)

Allowable Subject Matter

Claims 20-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The claims recite "the processing circuit is further operable to adjust the at least one electricity consumption measurement value by multiplying either the at least one electricity consumption measurement value or the phase shifted electricity consumption measurement value by the dynamic compensation factor, the dynamic compensation factor varying with respect to an average electricity consumption measurement value". This

feature in combination with the remaining claimed structure avoids the prior art of record.

Response to Arguments

Applicant's arguments filed 3-26-2004 regarding the objection to the specification have been fully considered but they are not persuasive. Applicant states that the equation for power use at page 2 of the specification is "sufficiently accurate". However, the equation presented is not generally an accurate indication of energy use. The equation appears to be a numerical integration, which requires a time differential for all sample times other than a unit sample time. Because this differential factor is not present in the summation, the energy use value would increase without bound as sample interval is decreased rather than approaching the actual energy use value. Additionally, it is the opinion of the examiner that normal experimentation by one of ordinary skill in the art to carry out the invention would not include determining which equations in a disclosure are accurate and which are inaccurate, and for the inaccurate equations, attempting to determine a corresponding, accurate relationship.

Applicant's arguments filed 3-26-2004 have been fully considered but they are not persuasive. Applicant states that Schweer does not disclose adjusting sampled current or voltage values; however, as disclosed at col. 8, line 50 Schweer discloses "correcting" the signal amplitudes which are derived through sampling. The claim recites, "sampled current value or sampled voltage value". Because the claim does not specifically define the manner in which the current or voltage may be sampled, the

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examiner is interpreting the phrase, "sampled current value or sampled voltage value" to include any voltage or current value derived from sampling.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Cherry whose telephone number is (571) 272-2272. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SJC


MICHAEL NGHIEM
PRIMARY EXAMINER

5/27/04